CLAIMS

What is claimed is:

1.   A wireless communication method for assigning multi-paths to Rake receiver fingers, the method comprising:

(a) establishing a Rake finger assignment database;

(b) categorizing a plurality of multi-path signals in the database into a verified group and an unverified group, wherein the verified group includes multi-path signals that were detected more than once and the unverified group includes multi-path signals that are not detected more than once; and

(c) categorizing the multi-path signals in the verified group into an assigned subgroup and an unassigned subgroup, wherein each of the multi-path signals in the assigned subgroup is assigned to a Rake receiver finger and each of the multi-path signals in the unassigned subgroup is not assigned to a Rake receiver finger.

2.   The method of claim 1 further comprising:

(d) comparing the signal strength of each multi-path signal to a predetermined noise floor threshold; and

(e) if the signal strength of the multi-path signal is less than the noise floor threshold, removing the multi-path signal from the database.

3.   The method of claim 2 wherein if the removed multi-path signal is categorized in the assigned group, the Rake receiver finger is no longer assigned to the removed multi-path signal.

4.   The method of claim 1 further comprising:

(d) during a measurement interval, receiving a plurality of newly measured multi-path signals;

(e) comparing each newly measured multi-path signal to the multi-path signals in the database; and

(f) if a newly measured multi-path signal is not found in the database, adding the newly measured multi-path signal to the database.

5.   The method of claim 1 wherein each multi-path signal is assigned a respective bin in the database, said bin including a data structure including a verification flag data field, wherein step (f) further comprises setting the verification flag data field such that it indicates that the multi-path signal is not verified.

6.   The method of claim 1 wherein each multi-path signal is assigned a respective bin in the database, said bin including a data structure including a verification flag data field, the method further comprising:

(d) during a measurement interval, receiving a plurality of newly measured multi-path signals;

(e) comparing each newly measured multi-path signal to the multi-path signals in the database; and

(f) if a multi-path signal in the database, that belongs to the unassigned subgroup, matches a newly measured multi-path signal, setting the verification flag data field such that it indicates that the multi-path signal is verified.

7.   The method of claim 1 wherein each multi-path signal is assigned a respective bin in the database, said bin including a data structure including a data field indicating the pilot phase of the multi-path signal.

8. The method of claim 1 wherein each multi-path signal is assigned a respective bin in the database, said bin including a data structure including a data field indicating the averaged signal strength of the multi-path signal.

9. The method of claim 1 wherein each multi-path signal is assigned a respective bin in the database, said bin including a data structure including a data field identifying an assigned Rake receiver finger.

10. A wireless communication system for assigning multi-paths to Rake receiver fingers, the system comprising:

(a) a Rake finger assignment database;

(b) means for categorizing a plurality of multi-path signals in the database into a verified group and an unverified group, wherein the verified group includes multi-path signals that were detected more than once and the unverified group includes multi-path signals that are not detected more than once; and

(c) means for categorizing the multi-path signals in the verified group into an assigned subgroup and an unassigned subgroup, wherein each of the multi-path signals in the assigned subgroup is assigned to a Rake receiver finger and each of the multi-path signals in the unassigned subgroup is not assigned to a Rake receiver finger.

11. The system of claim 10 further comprising:

(d) means for comparing the signal strength of each multi-path signal to a predetermined noise floor threshold; and

(e) means for removing the multi-path signal from the database if the signal strength of the multi-path signal is less than the noise floor threshold.

12. The system of claim 11 wherein if the removed multi-path signal is categorized in the assigned group, the Rake receiver finger is no longer assigned to the removed multi-path signal.

13. The system of claim 10 wherein, during a measurement interval, a plurality of newly measured multi-path signals are received, the system further comprising:

(d) means for comparing each newly measured multi-path signal to the multi-path signals in the database; and

(e) means for adding the newly measured multi-path signal to the database, if a newly measured multi-path signal is not found in the database.

14. The system of claim 10 wherein each multi-path signal is assigned a respective bin in the database, said bin including a data structure including a verification flag data field, wherein the verification flag data field is set such that it indicates that the multi-path signal is not verified.

15. The system of claim 10 wherein each multi-path signal is assigned a respective bin in the database, said bin including a data structure including a verification flag data field, and during a measurement interval, a plurality of newly measured multi-path signals are received, the method further comprising:

(d) means for comparing each newly measured multi-path signal to the multi-path signals in the database; and

(e) means for setting the verification flag data field such that it indicates that the multi-path signal is verified, if a multi-path signal in the database, that belongs to the unassigned subgroup, matches a newly measured multi-path signal.

16. The system of claim 10 wherein each multi-path signal is assigned a respective bin in the database, said bin including a data structure including a data field indicating the pilot phase of the multi-path signal.

17. The system of claim 10 wherein each multi-path signal is assigned a respective bin in the database, said bin including a data structure including a data field indicating the averaged signal strength of the multi-path signal.

18. The system of claim 10 wherein each multi-path signal is assigned a respective bin in the database, said bin including a data structure including a data field identifying an assigned Rake receiver finger.

19. The system of claim 11 wherein the system is a timeslot-based system and the measurement interval occurs on a frame-by-frame basis.

20. A wireless communication system for assigning multi-paths to Rake receiver fingers, the system comprising:

(a) a path scheduler (PS) for maintaining a list of pilot multi-paths;

(b) a processor in communication with the PS; and

(c) a memory device in communication with the processor and the PS, wherein the memory device has a first portion for storing the results of a pilot path search process running on the processor and a second portion for storing the results of a pilot signal measurement (PSM) process running on the processor.